( INTERMEDIATE )

**CHEMISTRY**
**PRACTICAL**

## GENERAL INSTRUCTIONS TO EXAMINERS

1. The examiners are requested to furnish the following information on the title page of each answer book in the order given below :
   a. Group no. of question paper.
   b. Salt provided to the candidate for analysis (question 1 )
   c. Substance provided for question 3 , solutions for question 2

2. The concept of molarity should be used in the calculations of gravimetric analysis.

3. In question 1 & 3 the neighbouring candidates should be given as far as possible different salts / organic compound which is not listed in the special / general instructions should not be given to the candidate.

4. The candidates should be asked to record all the observation directly on the answer book. Any change in the observation once recorded should be brought to the notice of the examiner and be initialled by the examiner.

5. The examiners should make sure that only those confirmatory test for acid and basic radicals are written in the answer book which are actually performed e.g. borax bead test and charcoal cavity tests are seldom performed by the candidates but most of time, these are written in the answer book. In case half of the allotted marks should be deducted.

6. For question 3, the following instruction should be observed :
   (a) For detection of elements in organic compound, provide urea, thiourea, chloral hydrate, aceamide or benzamide and iodoform.
   (b) For gravimetric estimation experiments, provide necessary materials and apparatus.
   (c) For detection of functional group provide :
      (i) For phenol naphthol, -naphthol, resorcinol
      (ii) For aldehyde glucose, benzaldehyde.
      (iii) For COOH oxalic acid , benzoic acid, citric acid, salicyclic acid.
      (iv) For purification heat of neutralization, chromatography preparations provide necessary material and apparatus.

7. In case of viva voce examiners are requested to ask question strictly relevant to practical prescribed in the syllabus. The examiners are further requested that the student should be asked to use the bottom side of the last page of answer book for writing down formulas, equations etc. as a record of answers and a clear heading of viva voce should be written. Award of marks should also be made of this place.

8. If functional group is given then write one special test for each functional group instead of procedure.

9. Full credit for practical note book should only be given if it is complete, well maintained and duly signed.

### NOTES

- Full credit should be given when the experiments, observations and inferences drawn are recorded in a systematic manner with correct formulas etc.
- In the case where the acid radical belongs to diluted group, the marks allotted for conc. $H_2SO_4$ test are to be added to the dil. acid group.
- In case when identification and confirmation is done in the same test, the marks for identification are to be added to confirmation.



(Turn Over)

30 Marks

Division of Marks

| Sr.No. | Experiment | Marks |
|---|---|---|
| 1. | Salt Analysis | 10 Marks |
| 2. | Volumetric Analysis | 10 Marks |
| 3. | Basic Techniques | 5 Marks |
| 4. | Note Book | 2 Marks |
| 5. | Viva Voce | 3 Marks |

Total = 30 Marks

**Q.NO.1** **Salt Analysis**

(a) Acid Radical = 4 Marks
(b) Basic Radical = 6 Marks
**Total** = 10 Marks

**Acid Radical**

(i) Dilute acid group = ½ Mark
(ii) Concentrated acid group = ½ Mark
(iii) Detection of acid radical = 1 Mark
(iv) Two confirmatory tests 1 × 2 = 2 Marks

**Basic Radical**

(i) Any of two dry tests 1 × 2 = 2 Marks
(Flame test, filter ash test, boraxliead test & Charcoal cavity test)
(ii) Detection of Group = 1 Mark
(iii) Detection of Radical = 1 Mark
(iv) Two confirmatory tests 1 × 2 = 2 Marks

**Q.No.2** **Volumetric analysis**

(a) First 20 minutes = 5 Marks
(b) Performance = 5 Marks

(a) **First 20 minutes**

(i) Principle = ½ Mark
(ii) Standard reagent = ½ Mark
(iii) Indicator = ½ Mark
(iv) End point = ½ Mark
(v) Chemical equation = ½ Mark
(vi) Method = 1 Mark
(vii) Supposed Calculations = 1 ½ Mark

**Total** 5 Marks

(b) **Performance**

(i) Measuring with pipette = 1 Mark
(ii) Burette reading = 1 Mark
(iii) Mean concarding reading = 1 Mark
(iv) Result = 2 Marks

**Total** 5 Marks

**Q.No.3.** (i) First 20 Minutes 2 Marks

(ii) **Basic techniques**

(a) **Preparations**

(i) Setting of apparatus = 1 Mark
(ii) Performance = 1 Mark
(iii) Result = 1 Mark



Contd ...... P/3

(b) **Chromatography**

| | | |
|---|---|---|
| (i) | Setting of apparatus | = 1 Mark |
| (ii) | Performance | = 1 Mark |
| (iii) | Result | = 1 Mark |

(c) **Purification**

| | | |
|---|---|---|
| (i) | Setting of apparatus | = 1 Mark |
| (ii) | Performance | = 1 Mark |
| (iii) | Result | = 1 Mark |

(d) **Detection of Elements**

| | | |
|---|---|---|
| (i) | Preparation of stock solution | = 1 Mark |
| (ii) | Designated chemical tests | = 2 Marks |

(e) **Identification of functional group**

Three tests $1 \times 3 =$ 3 Marks

(f) **Heat of Neutralization**

| | | |
|---|---|---|
| (i) | Setting of apparatus | = 1 Mark |
| (ii) | Performance | = 1 Mark |
| (iii) | Result | = 1 Mark |

(g) **Gravimetric Analysis**

| | | |
|---|---|---|
| (i) | Performance | = 1 Mark |
| (ii) | Result | = 2 Mark |